REMARKS

After entry of the foregoing amendments, claims 1-4, 6-17 and 19-35 are pending in this application. Claims 5 and 18 are canceled herein. Claim 1 is amended herein to incorporate the limitations of former claim 5. Claim 17 is amended herein to incorporate the limitations of former claim 18. Claims 6, 9, and 19 are amended herein to provide agreement with amended claims 1 and 17. New claims 21-35 are added. Support for these amendments is found throughout specification, as filed, for example FIGS. 7-14. No new matter is added by these amendments.

Claims 1-3, 5-8, 12 and 17-20 have been rejected. Claims 4, 9-11 and 13-15 have been objected to. Applicants thank the Examiner for the indication of allowable subject matter in claims 4, 9-11 and 13-15. Applicants also thank the Examiner for the allowance of claim 16.

Claim Rejections Under 35 U.S.C. § 102

1. Claims 1-2, 5-8, 12 and 17-20 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Itoyama U.S. Patent No. 6,230,697 ("Itoyama"). Claims 1-3, 5-8, 12 and 17-20 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Buckland et al. U.S. Patent No. 6,604,361 ("Buckland"). Applicants respectfully traverse these rejections.

Applicants have amended claims 1 and 17 to clarify the distinctions of the claimed subject matter over Itoyama and Buckland. Neither Itoyama nor Buckland, alone or in combination, disclose all of the features of amended independent claims 1 and 17.

For example, neither Itoyama nor Buckland disclose, teach, or suggest "a controller for controlling the EGR valve, wherein the controller obtains a target opening degree

of the EGR valve in accordance with an operating state of the engine and controls the EGR valve so that the opening degree of the EGR valve becomes equal to the obtained target opening degree, and, when opening the EGR valve from a fully closed state, the controller performs EGR primary control to ***restrict the opening degree of the EGR valve to a restricted opening degree that is smaller than the target opening degree during a predetermined delay time before actuating the EGR valve to the target opening degree, wherein the restricted opening degree is a constant value"*** as recited in amended claim 1. (emphasis added)

Similarly, neither Itoyama nor Buckland disclose, teach, or suggest "obtaining a target opening degree of the EGR valve in accordance with an operating state of the engine; controlling the EGR valve so that the opening degree of the EGR valve becomes equal to the obtained target opening degree; and when opening the EGR valve from a fully closed state, ***restricting the opening degree of the EGR valve to a restricted opening degree that is smaller than the target opening degree during a predetermined delay time before actuating the EGR valve to the target opening degree, wherein the restricted opening degree is a constant value***" as recited in amended claim 17. (emphasis added)

Claims 2-3, 5-8, 12 and 19-20 ultimately depend from independent claims 1 and 17, respectively, and are believed to define patentable subject matter for at least similar reasons. Claims 5 and 18 have been canceled, consequently their rejection is considered to be moot.

Accordingly, Applicants respectfully request withdrawal of the rejection applied to claims 1-2, 5-8, 12 and 17-20 under 35 U.S.C. § 102(b) as being anticipated by Itoyama. Further, Applicants respectfully request withdrawal of the rejection applied to claims 1-3, 5-8, 12 and 17-20 under 35 U.S.C. § 102(b) as being anticipated by Buckland.

2. Claims 1, 5-8, 12 and 17-20 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Shibagaki U.S. Patent Publication No. 2001/0035151 ("Shibagaki"). Applicants respectfully traverse this rejection.

Regarding the last limitation recited in the last paragraphs of claims 1 and 17, the Examiner asserts that Shibagaki discloses this feature at paragraph 0088. (*See* January 12, 2005 Office Action at page 3). The cited paragraph discloses:

> After FMODE1-FMODE3 are set to twelve, which represents homogeneous stoichiometric combustion, EGR is performed if the running state of the engine 11 is in a region to perform EGR and EGR can be performed. That is, as shown in FIG. 8(d), the target EGR opening Et is changed from zero to a value that is suitable for the current running state. Accordingly, exhaust gas is recirculated to the intake passage 32 after a certain delay.

To put the cited passage in context, Shibagaki also discloses:

> If the EGR mode FMODE1 is changed from zero to twelve during stratified lean combustion with EGR, the target EGR opening Et is temporarily changed to zero from a value that is suitable for stratified lean combustion as shown in FIG. 8(d). This is because the combustion state of the engine 11 may be deteriorated if EGR is performed immediately after the combustion mode is switched from stratified lean combustion to homogeneous stoichiometric combustion.

Shibagaki at paragraph 0078. Thus, as shown in FIGS. 8(a) and 8(d), when the state of the engine 11 changes as indicated by the value of FMODE1, the target EGR opening Et is temporarily set to zero, which closes the valve. After a delay period, the target EGR opening Et is set to a single target value, which does not change again during this state. That is, after a delay period the target EGR opening Et is set to a single target value that does not change again until the FMODE1 value changes back from twelve to zero, which is the beginning of a new engine state.

Applicants note that a closed valve is not open to "a restricted opening state." That is, a closed valve is not in an open state at all. Thus, Shibagaki fails to disclose, teach, or suggest, "a controller for controlling the EGR valve, wherein the controller obtains a target opening degree of the EGR valve ***in accordance with an operating state of the engine*** and controls the EGR valve so that the opening degree of the EGR valve becomes equal to the obtained target opening degree, and, when opening the EGR valve from a fully closed state, the controller performs EGR primary control to ***restrict the opening degree of the EGR valve to a restricted opening degree that is smaller than the target opening degree during a predetermined delay time before actuating the EGR valve to the target opening degree, wherein the restricted opening degree is a constant value***" as recited in amended claim 1. (emphasis added)

Similarly, Shibagaki fails to disclose, teach, or suggest a method of controlling an EGR valve by "obtaining a target opening degree of the EGR valve ***in accordance with an operating state of the engine***; controlling the EGR valve so that the opening degree of the EGR valve becomes equal to the obtained target opening degree; and when opening the EGR valve from a fully closed state, ***restricting the opening degree of the EGR valve to a restricted opening degree that is smaller than the target opening degree during a predetermined delay time before actuating the EGR valve to the target opening degree, wherein the restricted opening degree is a constant value***" as recited in amended claim 17. (emphasis added)

Claims 2, 6-8, 12 and 19-20 ultimately depend from independent claims 1 and 17, respectively, and are believed to define patentable subject matter for at least similar reasons. Claims 5 and 18 have been canceled, consequently their rejection is considered to be moot.

Accordingly, Applicants respectfully request withdrawal of the rejection applied to claims 1-2, 5-8, 12 and 17-20 under 35 U.S.C. § 102(b) as being anticipated by Shibagaki.

3. Claims 1, 5-8, 12 and 17-20 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Sausner et al. U.S. Patent No. 5,213,087 ("Sausner"). Applicants respectfully traverse this rejection.

Regarding the last limitation recited in the last paragraphs of claims 1 and 17, the Examiner asserts that Sausner discloses this feature in the second full paragraph in col. 3. (*See* January 12, 2005 Office Action at page 4). The cited passage recites:

> The shut-off valve's drive means can have a component that relatively delays its opening and synchronizes its closing with the throttle. A component of this type can consist for example of an unsymmetrical fluid flow damper. Such fluid flow dampers are in themselves known. They are employed for example as shock absorbers in motor-vehicle suspension systems.

In the cited passage, Sausner merely discloses that the valve opening is delayed and does not disclose, teach, or suggest that the valve is first opened to an intermediate value, which is constant, before being opened to a target value. Applicants note that when a valve is in a closed state it is not open to "a restricted opening degree."

Thus, Sausner fails to disclose, teach, or suggest a controller for controlling an EGR valve wherein "when opening the EGR valve from a fully closed state, the controller performs EGR primary control ***to restrict the opening degree of the EGR valve to a restricted opening degree that is smaller than the target opening degree during a predetermined delay time before actuating the EGR valve to the target opening degree, wherein the restricted opening degree is a constant value***" as recited in amended claim 1. (emphasis added)

Similarly, Sausner fails to disclose, teach, or suggest a method of controlling an EGR valve wherein "when opening the EGR valve from a fully closed state, ***restricting the opening degree of the EGR valve to a restricted opening degree that is smaller than the target opening degree during a predetermined delay time before actuating the EGR valve to the target opening degree, wherein the restricted opening degree is a constant value***" as recited in amended claim 17. (emphasis added).

Claims 6-8, 12 and 19-20 ultimately depend from independent claims 1 and 17, respectively, and are believed to define patentable subject matter for at least similar reasons. Claims 5 and 18 have been canceled, consequently their rejection is considered to be moot.

Accordingly, Applicants respectfully request withdrawal of the rejection applied to claims 1, 5-8, 12 and 17-20 under 35 U.S.C. § 102(b) as being anticipated by Sausner.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that all claims, as currently presented, define patentable subject matter over the cited art. Applicants respectfully request reconsideration and withdrawal of the rejection of claims and allowance of this application.

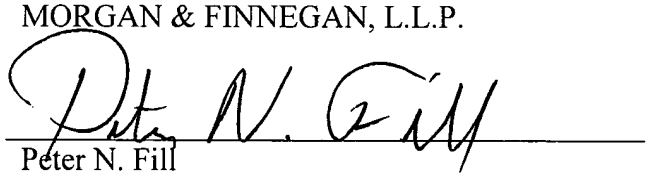
AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 5000-5110. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 5000-5110. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: June 10, 2005

By: 
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